

Jeld-Wen Allotment - #0822 **Rangeland Health Standards Assessment (RHSA)**

Introduction/Background

The Jeld-Wen allotment (#0822 - also known in the past as Stukel-O'Neill) is located within the central portion of Stukel Mountain, which lies about 8+ miles southeast of Klamath Falls, Oregon. This allotment is a highly fragmented assortment of public land parcels (3,122 acres) that are used in conjunction with approximately the same amount of intermingled - and equally fragmented and largely unfenced - private lands (see map). All together, these lands make a relatively contiguous block of grazing lands. The private lands are owned by Jeld-Wen Timber & Ranches (a division of Jeld-Wen, Inc.) who currently lease their lands for grazing purposes to a local livestock operation (Denis Hickey & Drew Hill). Due to the steep mountainous and thickly vegetated nature of the area, a significant amount (30-40%) of the lands - public and private - are marginally accessible to cattle.

The history of the allotment is somewhat vague, but it was apparently divided by a couple division fences into at least 3 pastures which included BLM lands. (There is also some fencing that affects only private land in the northwest portion of the allotment along the Hidden Valley Road.) One interior fence is largely on BLM and dissects the allotment east-west in the vicinity of the aspen grove. There is also another fence several miles north of the above fence that is on private lands but divides the extreme northern BLM parcel (approx. 1000 acres) from the rest of the allotment. These fences divide the allotment roughly into thirds - the North, Central, and South pastures - though currently these fences are largely dysfunctional and hard to maintain due to topography, down trees, snow loads, damage from the public, etc. There is also boundary fencing that divides allotment #0822 from the Stukel-Hill (#0828), Stukel-Dehlinger C. (#0815), and Stukel-Dehlinger H. (#0816) allotments to the west and the Rodgers's (#0852) allotment to the east. These fences - and most fences on Stukel - also suffer from the same chronic maintenance problems as the internal division fencing.

The grazing use on Jeld-Wen was recently (1988-1999) done in conjunction with the Rodgers's (#0852) allotment to the east, as they both had the same grazing lessee (I.F. Rodgers & Sons). Rodgers went bankrupt several years ago and Jeld-Wen has recently leased their properties to a new operator; thus, the Rodgers and Jeld-Wen allotments now have different grazing lessees. (Note: The Rodgers allotment is scheduled to be Assessed independently later this year.) The existing grazing preference on Jeld-Wen is 210 AUMs with a season of use of 5/1 to 7/15 (84 head). Though at least half of this allotment is intermingled with and largely unfenced from the private (Jeld-Wen, Inc.) lands, there generally has been no exchange-of-use (EOU) "credit" authorized. The one exception is 240 AUMs of EOU allowed in 1988.

Jeld-Wen is a lower priority "I" category allotment that was identified in the 1995 *Klamath Falls Resource Area Record of Decision and Resource Management Plan* (ROD/RMP) as potentially in need of a reduction of 60 AUMs from the existing preference. However, prior to 1973 the grazing preference was 446 AUMs; an allocation that was reduced to 209 AUMs in 1973 and evolved into the current 210 AUMs in 1981. The 1973 reduction in grazing of 53% was based on a 1970 "Grazing Capacity

Estimate” that rated the allotment capacity at 211 AUMs. The historical grazing levels are discussed more fully under “Forage Allocation History” in the narrative for Standard 1. Whether the proposed ROD/RMP decrease in grazing use is a resource necessity at this point is a primary subject of this Assessment.

Prior to 1989, the season-of-use was longer than the currently authorized 5/1 to 7/15. Specifically, from 1986 to 1988 the season was 4/15 to 8/31, from 1974 -1985 it was 4/16 to 9/30; and prior to 1974 there was no defined season-of-use, which means the grazing was likely season-long (i.e. from initiation of spring green-up until the late fall snow drove the cattle off the mountain). Though not documented well in the files, apparently the season-of-use was gradually shortened to try to lessen the perceived resource problems and possibly limit the utilization of important deer browse species. There was also a simple grazing system used during the 1970's and early 1980's that grazed the north allotment early (4/16-5/30) and the south allotment later (6/1-9/30), though what this actually meant on the ground is not known.

The ROD/RMP recommended a 5/1 to 7/1 season of use, in conjunction with the AUM reduction, to improve resource conditions. However, the ROD/RMP (page H-1) also stated that “*All changes to...livestock grazing management will be made through the monitoring and evaluation process...*” Though a small allotment, some monitoring information has been collected because of its “T” category ranking. This Assessment will be an evaluation of that information to determine if current livestock grazing management is meeting resource objectives.

This allotment had five “Identified Resource Conflicts/Concerns” noted in the ROD/RMP (Appendix H, page H-25) which will each be addressed, implicitly or explicitly, by one or more of the 5 Standards in this Assessment. The conflicts/concerns and related “Management Objectives” are as follows:

**Identified Resources
Conflicts/Concerns**

Under current management the range condition, level or pattern of utilization, and/or season-of-use may be unacceptable; or carrying capacity may be exceeded.

Big game limited by unsatisfactory habitat condition.

Critical deer winter range occurs in allotment.

Active erosion occurs in the allotment.

Riparian or aquatic habitat is in less than good habitat condition. Maintain and improve riparian or aquatic habitat in good or better condition.

**Management
Objectives**

Maintain or improve rangeland condition and productivity through a change in grazing management practices, timing, and/or level of active use.

Maintain and improve big game habitat in satisfactory condition

Management systems should reflect the importance of deer winter range.

Maintain and improve erosion condition in moderate or better erosion condition.

The allotment was originally ranked as an overall “T” category allotment during the first round of Selective Management classification completed on 9/21/1982. Categorization of grazing allotments has been required by Bureau policy since the early 1980's in order to direct limited manpower and funding to resource problem areas that need it and would benefit most. A brief summary of the

categorization efforts follows as it is indicative of relative resource concerns past and present. (“T” or “Improve” allotments have the highest priority resource concerns, “M” or “Maintain” allotments are moderate priority; and “C” or “Custodial” allotments are the lowest resource priority, usually due to small size and/or lack of ability to make significant change. See the ROD/RMP Appendix H, pages H-69-70 for further information on the allotment categorization - “selective management” - process.):

1982 Ranking

#1 - *Range Condition: Satisfactory* (“M” ranking).

#2 - *Forage Production Potential: Production is moderate to high & present production low to moderate.* (“T” ranking)

#3 - *Resource Use Conflicts: No serious conflicts or controversy.* (“M” ranking)

#4 - *Economic Returns: Opportunities exist for positive economic returns.* (“T” ranking)

#5 - *Present Management: Unsatisfactory.* (“T” ranking)

The following note was made on the rating form in 1982: “*Rec/livestock (conflicts). Private land owner resent public on private land.*” The “T” category ranking was carried forward into the 1995 ROD/RMP.

The sections immediately following are some various informational summaries that will assist in the Standards assessments that follow.

Grazing Use: The Jeld-Wen allotment grazing levels for most years are difficult or impossible to accurately determine today. The following is a “best estimate” summary of the grazing use for the past 30+ years. A few years have corresponding monitoring/observational data to compare the use against (covered later), though most years don’t:

	<u>Cattle #</u>	<u>Season-of-Use</u>	<u>Total Use</u>
2001	Licensed use on #0822 was for 70 head from 5/1 to 7/31. Actual use reported was 150 cattle from 4/25 to 7/1 combined for both of the lessee’s allotments - #0815 & #0822. In discussing the grazing use with the lessee on 1/12/02, most was believed made on the Jeld-Wen allotment. It is estimated that of the 335 AUMs of total use (150 head for 68 days), 250 AUMs were made on #0822 and 85 AUMs on #0815.		
2000	Allotment not used, no designated grazing lessee.		
1989-99 1.	84	4/15 - 8/31	210 AUMs 2.
1988 3.	100	4/20 - 8/10	450 AUMs
1986-87	Allotment in non-use for two years after Jeld-Wen, Inc. bought the base lands in late 1985.		
1984-85 1.	38	4/16 - 9/30	210 AUMs
1983	No billing issued, though unlicensed cattle use was made according to notes in one of the Peggy O’Neill grazing files (a past grazing lessee). Levels of use unknown.		
1981-82 1.	Authorized non-use.		
1975-80 1.	38	4/16 - 9/30	209 AUMs
1974 1.	Livestock numbers and season-of-use not specified (i.e. season-long); license issued simply for 210 AUMs.		
1973 1.	Same as 1974, but 206 AUMs licensed (53% reduction implemented).		
1969-72 1.	Same as above, but 446 AUMs licensed.		
Prior to 1969	Allotment licensed on an acreage basis, not AUMs (explain in Standard 1).		

1. Licensed use amount; no accurate actual use information available.

2. Grazing use during the 1988-1999 period was combined with the neighboring Rodger’s allotment (#0852). Since cattle can freely roam between the two allotments (i.e. poor/no fencing) the actual grazing use is not

possible to determine accurately. The AUMs listed are licensed, not actual use.

3. 1988 figure based on actual use information indicating 100 cattle were on this allotment (and 150 on the neighboring #0852 allotment) for the period shown - see 2. note also about cattle “roaming”.

Public Use Conflicts: Like all the public lands on Stukel Mountain, Jeld-Wen has also experienced chronic “people” problems for decades. These problems were already explained in some depth in the Stukel-Dehlinger C. *Rangeland Health Standards Assessment* and will not be fully reiterated here except to say that the problems are chronic and probably escalating. One specific instance occurred in 2001 on the Jeld-Wen allotment when one of the hired hands for the grazing lessee had a gun pulled on him by a member of the “public” when pumping a well on the private Jeld-Wen, Inc. lands. Fortunately, no one was hurt, but it does point out that the problems with public use in the area are not benign.

Land Use Planning: During the early stages of the KFRA RMP process (1990-1991), most grazing allotments in the KFRA were generally evaluated by an interdisciplinary team (IDT) - known at the time as the “mini core team”. For the Jeld-Wen allotment (called Stukel-O’Neill at that time) an assortment of condition issues and concerns were raised at the January 14, 1991 meeting. The pertinent (to livestock) resource related issues and concerns from that meeting follow:

Range Management: The allotment is being over utilized, with 70% utilization levels recorded.

Needs a season of use change and a carrying capacity change.

Wildlife: The aspen enclosure is of concern. There is also bald and golden eagle activity around the reservoir. This area is deer summer range, so it would be beneficial to improve range conditions.

Watershed: Need to maintain enclosure and to reduce utilization levels. Riparian condition needs improvement, also.

Realty: The Jeld-Wen property previously has been identified for exchange. We need to acquire other private lands, if possible, in order to block up BLM ownership.

Botany: There is the possibility of Rorippa sites in areas where vernal water occurs.

The lists of resource issues which resulted from these team meetings ultimately led to the creation of the earlier noted allotment specific “Identified Resource Conflicts/Concerns” in the KFRA ROD/RMP, Appendix H. These mini-core team identified resource concerns add to the body of knowledge which indicates grazing use on this allotment has been problematic at times. These concerns will be addressed in this Assessment.

Additional Assessment Process Notes:

Bureau policy and direction articulates a preference that RHSA’s be done at the watershed scale, unless “compelling” reasons dictate a different assessment boundary. Since no watershed analysis is planned for Stukel Mountain, the area allotments will be assessed individually. Since grazing management - and changes to such - must be effected physically at the allotment level and administratively at the permit/lease level, evaluation and assessment at an allotment scale is appropriate. Typically, cattle use stops/begins at an allotment boundary fence. This assessment process is also in accordance with current direction and policy guidance, including the recent Rangeland Health Standards Handbook, H-4180-1.

Some of the information discussed under one Standard may be discussed under one (or more) of the other Standards. This is partially due to the same monitoring or observational information being

used to address several Standards. The bulk of the monitoring information is discussed in the first Standard because the allotment is upland in nature and the first Standard on upland functionality makes a convenient location for most of the analysis.

The condition or degree of function of an area in relation to the Standards and its trend toward or away from any Standard is determined through the use of reliable and scientifically sound indicators - know as "Indicators of Rangeland Health". The H-4180-1 Handbook defines an "indicator" as: *"Components of a system whose characteristics (presence or absence, quantity, distribution) are used as an index of an attribute (e.g. rangeland health attribute) that are too difficult, inconvenient, or expensive to measure"*. Though the Handbook encourages the use of "...dissimilar indicators..." for each Standard, there is rarely enough information available to have unique indicators for each Standard. Examples of indicators can include ecological condition ratings, plant cover and productivity, different erosional attributes, and many other potential ones. In this assessment area there has been some limited grazing related information collected due to its moderate priority status. Thus, there are a few quantitative and qualitative indicators that can be used for this Standards assessment. There are also some studies - most notably utilization - which in itself is not an indicator as defined above, but is a well accepted measurement of a primary environmental stressing agent (grazing) which is linked closely with changes in functionality. The indicators and studies used are explained in the assessment that follows. (Note: The brief description of the Standard in bold, is quoted from the approved *"Standards for Rangeland Health and Guidelines for Livestock Grazing Management for Public Lands Administered by the Bureau of Land Management in the States of Oregon and Washington - August 12, 1997"*.)

The "Guidelines for Livestock Grazing Management" comprise a set of concepts to consider when evaluating the current or proposed grazing management of an area against the 5 Standards. To quote the 4180 Handbook, a "guideline" is: *"A practice, method or technique used to ensure that standards can be met or that significant progress can be made toward meeting the standard. Guidelines are tools such as grazing systems, vegetative treatments, or improvement projects that help managers achieve standards. Guidelines may be adapted or modified when monitoring or other information indicates the guideline is not effective, or a better means of achieving the applicable standard becomes appropriate."* The actual Oregon/Washington Guidelines for Livestock Grazing Management are included with this assessment, for informational purposes, as Appendix 1.

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STANDARD 1 - WATERSHED FUNCTION - UPLANDS (Upland soils exhibit infiltration and permeability rates, moisture storage and stability that are appropriate to soil, climate and land form.)

The primary information/monitoring to be used in evaluating this Standard are the observations from utilization point readings and use pattern mapping; recent "Rangeland Health Evaluation Summary Worksheets" prepared at two representative locations on the allotment; miscellaneous information and file notes found in the grazing and allotment files; and the application of professional judgement to the information by BLM personnel who have monitored and are familiar with the area. The indicators that this information helps address are: plant cover, litter, composition, production, age class and community structure; level of erosion and overland flow.

Rangeland Health Evaluation Summaries: During November of 2001, this allotment was qualitatively assessed using the process outlined in Technical Reference 1734-6, *"Interpreting Indicators of Rangeland Health"*. This field assessment was performed by a small BLM team consisting of two

rangeland management specialists and two botanists. A "Rangeland Health Evaluation Summary Worksheet" - a.k.a. Upland PFC (Proper Functioning Condition) - was prepared at each of the two representative locations on the allotment. The field visit was also documented in a memorandum to the allotment files dated 11/26/01. The pertinent information from that memo is quoted below:

North Site: Located in and representing the northern portions of the allotment.

This write-up was done (11/7/01) in the central portion of the "north parcel", about 1 ½ miles SE of Olene Gap and near utilization point #12 (T39S, R10E, Sec. 25, SWNW). It is just north of a large burned area on Jeld-Wen lands that appears to have burned in the past 5-10 years (though don't know for sure). The burned area had heavy stands of medusa and cheatgrass, though a smattering of perennial grasses were also mixed in. There was some sign of cattle use in the area, which was expected, since the BLM lies between two private water holes and the area was licensed this year. (NOTE: There are also some relatively recent prescribed burn (3 or so years ago according to Joe - probably fall of 1998) areas on the BLM lands to the east of the write-up area (Section 25, SE 1/4). These areas had a good kill on the big sagebrush with a commensurately nice release of perennial grasses. Only problem - albeit very small - was a slight increase in rabbitbrush.)

The actual write-up was done in a *Shallow Stony 10-20"* ecological site (low sagebrush - Sandberg's bluegrass) on the west side of the saddle. All three Rangeland Health Attribute categories (Soil/Site Stability, Biotic Integrity, and Hydrologic Function) rated out as "None to Slight" departure from that expected in the ecological site description/reference area. Concerns noted were related to the probability of juniper invasion, the moderate levels of annual grasses, and the probable loss of some soil due to past grazing pressure. Overall, however, the conditions were appropriate and better than expected.

South Site: Located in and representing the central and southern portions of the allotment.

This write-up was done (11/8/01) in the east central portion of the allotment's central parcel (T40S, R10E, Section 1, NENW) near utilization point #6. This area was also prescribed burned in recent years - also probably the fall of 1998. The write-up was done in a patchy area of burned and unburned areas - approximately 60-65% burned & 35-40% unburned. The writeup reflects the mix of both burned/unburned in the overall ratings. Livestock use was also evident as this area is also a public parcel located between two private parcels which have livestock watering facilities (i.e. water holes). Utilization was moderate on perennial grasses (mostly oatgrass) in the drainage bottom, diminishing rapidly to light/slight as we walked up the hill to the east (to Worksheet writeup area).

Even though these type big sage areas are relatively common, they don't have a good ecological site description to compare against. Because of this, the mountain big sagebrush/perennial bunchgrass area described for the Stukel-Dehlinger C. allotment (#0815), on October 18, 2001, was used as the reference area for comparison. (See that allotments' *Rangeland Health Evaluation Summary Worksheet preparation* notes dated 10/18/01 for more information on the lack of a suitable ecological site description and reference area information.) The #0815 site is a very good example of a "typical" mountain big sagebrush site as they are (or should be) found on the "eastside" KFR lands outside of the Gerber Block. This writeup could be used as a reference area for other Health Evaluations over time.

Because of the juniper invasion and burning, and subsequent increase in annual grasses in the burned areas, the area was rated with "Slight to Moderate" departure from the ecological site description/reference area standards in all three rating categories. Fortunately, the area didn't appear to be detrimentally affected by recent (past few decades) livestock use. The perennial grasses are still abundant, but displaced enough by annuals in the burned areas to lower the overall rating. It was

thought by the team that the conditions are still good enough to be “functional” overall and that the perennial grasses will be able to overcome the annuals eventually. Only time will tell and this site is at a lower elevation (4618') where the annual grasses can be a long term condition depressant. Periodically monitoring this location (it was GPS'd - see the Worksheet) might be useful in future to watch the conditions change as it is a location where burned and unburned can be observed side by side easily.

The process that produces these Worksheets, assesses the current observed conditions against a suitable baseline, typically an ecological site description or ecological reference area, which is defined as follows:

A landscape unit in which ecological processes are functioning within a normal range of variability and the plant community has adequate resistance to and resiliency from most disturbances. These areas do not need to be pristine, historically unused lands (e.g. climax plant communities or relict areas).

As noted in the narratives above, the pertinent ecological site description was used as a reference area surrogate for the north site and the mountain big sagebrush write-up area for the Stukel-Dehlinger C. (#0815) allotment was for the south sites evaluation of the upland PFC information. The extensive local field experience of the observers was also an important part of this evaluation. The north Jeld-Wen allotment site was found to have little (“*none to slight*”) divergence from estimated reference area functionality for the three major attributes of rangeland health - *Soil/ Site Stability, Hydrologic Function, and Integrity of the Biotic Community*. The south writeup site was found to have more divergence (“*slight to moderate*”) from the noted reference area in the three categories of rangeland health. This divergence was attributed to the prescribed burning that took place several years ago and the ever growing juniper encroachment.

These upland PFC observations were made at the end of a period (mid to late 1990's) of overall average precipitation (though wide variance from the mean) and probably average grazing use. This combination has apparently allowed conditions to slowly restore as compared to the observations made in the 70's and 80's. The facts of the current good conditions and noted past heavy grazing use (next section) seem to conflict with each other. Since both PFC writeup areas have historically received substantial grazing use, these ratings are considered a very positive indicator that functionality has not been compromised by past livestock grazing use, though it does not necessarily validate the high grazing use that did occur.

Utilization Information. Utilization has been frequently read since 1985 when 12 use zones, and accompanying utilization reading areas, were established stratifying the allotment. Specific acreage figures were calculated for each zone when established. These zones were used in arriving at an “average utilization” figure for the allotment. The points are stratified throughout all portions of the allotment on a mix of public and private lands, reflecting the fragmented nature of this allotment. Not all of the utilization points were read every year. Below is the information collected in averaged, summary form:

JELD-WEN ALLOTMENT (#0822) - Utilization Information

<u>Year</u>	<u>Average Utilization 2.</u>	<u>Range of Utilization 1.</u>	<u>Actual Use (AUMs)</u>	<u>Growing Conditions</u>	<u>Yield Index (YI)</u>	<u>Desired 4. Use AUMs</u>
1985	43.6%	10-83% (12)	210 6.	Average-	(YI=89%)	271 (241)

1988	64%	36-82% (11)	450 6.	Below average	(YI=75%)	469 (352)
1989	76%	58-85% (12)	210 3.	Average+	(YI=112%)	123 (138)
1990	67.6%	66-69% (4)	210 3.	Above average	(YI=117%)	133 (155)
1991	66.5%	50-75% (12)	210 3.	Below average	(YI=77%)	205 (158)
1992	48.9%	0-79% (12)	210 3.	Below average	(YI=42%)	512 (215)
1993	49.9%	9-68% (9)	210 3.	Above average	(YI= 196%)	107 (210)
1994	51.6%	28-66% (9)	210 3.	Below average	(YI=75%)	271 (203)
1998	37.8%	25-53% (9)	210 3.	Above average	(YI=152%)	183 (278)
2001	31.9%	21-45% (2)	250 5.	Below average	(YI=50%)	<u>299 (150)</u>
Average Desired Use (AUMs) =						253 (210)

1. Number in parentheses is the total # of utilization points read that year.
2. Acres weighted average based on the use zones delineated in 1985, though most years not all of the use points were read.
3. Grazing use during the 1988-1999 period was combined with the neighboring Rodgers's allotment (#0852). Since cattle can freely roam between the two allotments (i.e. poor/no fencing) the actual grazing use is not possible to determine accurately. The AUMs listed are licensed, not actual use.
4. The figure in parentheses is the Desired AUMs calculated **without** adjustment for climate with the Yield Index.
5. Based on reported actual use and subsequent discussion with grazing lessee about split of use with the neighboring allotment (#0815).
6. Licensed use (1985); actual use (1988).

The "Actual Use (AUMs)" figure is the estimated amount of forage used by livestock that year. "Average Utilization" is the average of the different utilization point readings for that year, with the "Range of Utilization" showing how much the utilization varied by use point. The "Yield Index" is a precipitation based index which allows for an estimate of how much the herbage yield varies from average, i.e. a yield index of 75% indicates that the yearly production was approximately 3/4th of average. It can be thought of as a numerical rating of the growth season and is used to "adjust" the observed average utilization figure to approximate an average year.

As with most monitoring information of this type which has been collected by many people over time, the results can appear inconsistent and disproportionate in comparing one year against the others. This is particularly true for utilization and is the reason that multiple readings are collected over time and averaged; the more time/information the better in arriving at a best estimate of an average livestock carrying capacity. As outlined in BLM Technical Reference 4400-7, and summarized in the KFRA ROD/RMP (page H-73), the following formula may be applied to the utilization data to assist in the setting of a proper stocking level number:

$$\frac{\text{Actual Grazing Use (AUMs)}}{\text{Adjusted Observed Utilization (\%)}} = \frac{\text{Desired Use (AUMs)}}{\text{Desired Utilization (50\%)}}$$

The formula is solved for the missing factor - in this case "Desired Use (AUMs)". Given the ROD/RMP allowable use level of 50% (page H-75), "Desired Use" would be the level of hypothetical grazing use (AUMs) that would have resulted in 50% grazing use for that year. The yearly "Desired Use" is listed in the last column of the utilization table.

As noted in the table above, the average proper stocking level, based on the 10 usable years of information adjusted for climate, is 253 AUMs. This is 43 AUMs *more* than the current lease maximum of 210 AUMs. However, the non-climate corrected figure is (coincidentally) exactly the same as the current lease maximum. If only the most recent readings are considered - the 4 years (1993,1994,1998 & 2001) that were read by the range staff members involved with the 2001 Upland

PFC readings and this Assessment - the climate adjusted and non-adjusted averages are 215 and 210 AUMs, respectively. Again, almost precisely in line with the current lease. Overall, these figures are consistent with the 2001 upland PFC observations that indicate appropriate vegetation conditions and functionality.

However, there is one further factor to keep in mind. This is that an average masks the extremes. In reviewing all the utilization data, there are always areas that are used higher and some that are used lighter or not at all - even in the overall heavy use years. This variance is indicated by the "Range of Utilization" in the utilization table above. When large areas of proper (or no) use are averaged with localized areas of overuse, the overused areas may be inappropriately diminished in importance. This is where use pattern mapping becomes an important and useful interpretive tool. Use pattern mapping has been done on the allotment three different years - 1993, 1994, and 2001. This included one very wet year (1993) and two dry to very dry years (1994 and 2001, respectively).

Specifically for this allotment, the use pattern mapping identified a large majority of the area as having consistently appropriate (slight to moderate) use levels. This includes virtually all of the BLM lands and a large majority of the Jeld-Wen lands. The only significant exception on the BLM administered lands is a portion (~10 acres) of non-excluded dry meadow area around the "aspen grove" in the west-central portion of the allotment. The heavy use is a function of a primary livestock watering facility being located here and the division fence for two allotments (Jeld-Wen and Stukel-Hill #0828) running through the middle of the pond. This shallow reservoir was specifically created for watering livestock on the two allotments and the impoundment may be the reason for the area having as much meadow character as it has. Most of the aspen grove has been exclusionary fenced (3.76 GPS's acres) for at least 25 years, though past maintenance levels are suspect. The enclosure has been pretty well maintained the past 10 years, i.e. within the locally based memory of the author of this document.

There has also been heavy use recorded at times on a small portion of a detached 120 acre public parcel 1½ miles southeast of the aspen grove. This parcel is a narrow drainage area with several very small, dug-out water catchments created for livestock use. The BLM-private boundary line runs through both catchments and the drainage bottom is about an equal split of both ownerships. On the other Jeld-Wen owned lands there are an assortment of areas that have shown consistent heavy use, though these areas are also at or near livestock watering facilities where heavy use is expected and a small "cost" of grazing the area. In general for this allotment, the majority of the livestock watering areas are on private lands, where the BLM does not have management authority except indirectly via the BLM lease. Regardless of how the utilization information is viewed, the two BLM high use areas - particularly the aspen grove - do bear continued monitoring since the possibility of detrimental resource impacts may still exist. (See the "Management Recommendations" section.)

Photo Points. There are no formal photo points located on this allotment, though in 1990, 1991, and 1992, an assortment of informal (i.e. not permanently staked) view and closeup ground photos were taken at or near some of the established utilization points. These photos were apparently taken to provide visual support for the utilization data that was collected. None of these photos have been retaken since the early 90's, though some could probably be relocated if deemed necessary to help show what changes have occurred over the past 10 years. (See the "Management Recommendations" section.)

Forage Allocation History. Based on a review of the older grazing files, the section 15 grazing

lands in the old Lost River Resource Area (which is now part of the current KFRA) were converted from acres based to AUM based licensing during the 1968-1970 period. (The section 15 lands are essentially all the KFRA administered lands outside of the Gerber Block Grazing District.) Most of these allotments were converted at the ratio of 10 acres equaling one AUM, e.g. a 100 acre lease of BLM lands was now being leased at 10 AUMs. Some allotments, however, were given a more generous grazing use allocation. This includes many of the Stukel Mountain allotments - including Jeld-Wen - which were converted at the ratio of 7 acres equaling one AUM. These conversions were not apparently based on any type of range survey or monitoring information, but were instead converted based on the acreage and presumably some knowledge of the forage capabilities of the area in general. Given the elevation and climatic regime of our area (13"-18" precip.) and the vegetation communities that this precipitation can support, a 7 to 10 acres/AUM maximum allocation is generally reasonable though in many areas less is warranted.

Specifically for the Jeld Wen allotment, between the 1969 and 1970 grazing seasons, the allotment was converted from an acreage based grazing lease (3,122 acres at \$0.0475 per acre) to an AUMs based lease for 446 AUMs (i.e. 7 acres/AUM). In October 1970, a BLM range conservationist (Hill) made a "Grazing Capacity Estimate" which divided the allotment into dozens of discrete units and assigned a forage allocation to each unit. When added up, the grazing capacity of the BLM lands in the allotment was estimated at 211 AUMs - far less than the then authorized preference of 446. Presumably because of this rating and ongoing observations of heavy use, the grazing lease was reduced to 209 AUMs just prior to the 1973 grazing season. This figure was subsequently adjusted in 1981 to the current lease amount of 210 AUMs. The current lease averages 15 acres per AUM for the BLM leased lands; it is 30 acres per AUM if the intermingled private lands are included. This appears to be a fairly conservative figure - especially with the consideration that the private lands have no exchange-of-use authorized.

Determination: ***This Standard is currently being met.***

Recent monitoring information indicates that current conditions on the BLM administered lands are appropriate for meeting this Standard. Because of this, the Standard must be considered met regardless of some of the past grazing history. The lack of an exchange-of-use "credit" for the intermingled private lands - and the resulting lessened livestock numbers - is a reason that conditions are likely to maintain or improve in the future. Additionally, the past observed heavy use may have been a function of livestock drift from neighboring allotments and/or trespass from unauthorized livestock. This issue also needs monitored more closely over time. The ROD/RMP objective relative to erosion on page 2 would be considered met since the two Upland PFC determinations found no more than "slight to moderate" departure from reference area conditions for the *Soil/ Site Stability* indicator summary.

STANDARD 2 - WATERSHED FUNCTION - RIPARIAN/WETLAND AREAS

(Riparian-wetland areas are in properly functioning physical condition appropriate to soil, climate, and land form.)

The primary information/monitoring to be used in evaluating this Standard are observational from the use pattern mapping and miscellaneous information and file notes, with the application of professional judgement to the information by BLM personnel who have monitored the area. The indicators that this information helps address are: plant cover, litter, composition, production, age class and community structure; upland watershed conditions; level of erosion, sedimentation, and overland

flow.

The only significant riparian/wetland area on BLM administered lands is the “dry meadow” just below (NW) the aspen grove in the west-central portion of the allotment. As noted under Standard 1, essentially all of the aspen grove has been exclosure fenced for many years and is in good condition. The artificial impoundment/waterhole below the exclosure (~150 yards northwest) is accessible for cattle watering from the two adjacent allotments. Although the area immediately around the water hole experiences frequent heavy use, it is a very small (5-10 acres), relatively resilient area with little slope and limited erosion potential that was created specifically for livestock watering. As such, it is fulfilling its intended purpose. There are also small portions of numerous ephemeral drainages on the public lands in this allotment for which little specific monitoring information is available or probably necessary. All these drainages lie substantially on private lands, but what there is on BLM administered lands is in steep slope areas with limited potential for excessive grazing pressure. Field observations indicate that these drainages are in acceptable condition, have minimal riparian character, and of little resource concern at this time.

Determination: *This Standard is currently being met.*

Similar to the determination for the first Standard, Standard 2 must be considered met at this time on the Jeld-Wen allotment. However, periodic monitoring of certain areas - particularly near the aspen grove - would be useful to ensure that unacceptable resource problems are not occurring. (See “Management Recommendations” section.)

STANDARD 3 - ECOLOGICAL PROCESSES (Healthy, productive and diverse plant and animal populations and communities appropriate to soil, climate and land form are supported by ecological processes of nutrient cycling, energy flow and the hydrologic cycle.)

The primary information, monitoring, and indicators to be used in evaluating this Standard are those listed under Standard 1.

Since the allotment is virtually all upland in nature, the analysis and information listed under Standard 1 is the basis for the determination under this Standard. Most important of this information, the two Upland PFC determinations found limited divergence from estimated reference area functionality for the three major attributes of rangeland health - *Soil/Site Stability*, *Hydrologic Function*, and *Integrity of the Biotic Community*. Though qualitative in nature, the Upland PFC determinations provide a strong indication that ecological processes are operating properly at this time. Continued monitoring of the allotment is important to ensure that overuse, if it occurs in the future, does not cause irreversible resource harm.

One further ecological issue needs some discussion - western juniper (*Juniperus occidentalis*) and its place in the ecosystem of Stukel Mountain. Most portions of the Klamath Basin, above the valley floor and below about 5500', have been experiencing varying degrees of the juniper “problem”. This includes juniper encroachment into vegetation communities - particularly big sagebrush - that previously had little to no juniper and significant density increases in areas where juniper was and should be present, though in lesser quantity. Though a native plant, in the absence of fire (a function of increased suppression and grazing related fine fuels reduction) and with the stimulus of livestock grazing reducing shrub and grass competition, juniper can increase to the point that the vegetation community is virtually a monoculture of these trees. This results in diminished habitat capabilities for most native wildlife species, dramatically reduced forage production for all grazing animals, and

frequently an environment conducive to the invasion of undesirable exotic annual grasses and forbs.

On the Jeld-Wen allotment juniper increases have been and continue to be an ecological condition issue, particularly in the mountain and basin big sagebrush communities (*Artemisia tridentata* ssp *vaseyana* and *tridentata*, respectively) and mountain mahogany (*Cercocarpus ledifolius* and *C. montanus*) sites. In particular, the central and southern portions of the BLM lands have very thick juniper stands on the hillslopes and most drainages, though the northern portions also have some limited juniper density problems. In the mid to late 1990's some of the northern and central BLM areas in the allotment were prescribed burned, though mostly in areas that were relatively sparsely populated with juniper. Burning related reductions in juniper was very limited, though other native vegetation (grasses and forbs) benefitted from this burning in many areas. Unfortunately, many areas also realized a significant increase in exotic annual grasses because of this burning. Prescribed burning in these type areas was largely discontinued because of these problems. As an alternative to prescribed burning, in 2000 and 2001 extensive hand felling and piling/burning of the juniper was done to help reduce fuel loading in the central portions of the allotment (T40S, R10E, S. 1 & 2). This has significantly opened up closed juniper areas hopefully allowing for the restoration of more typical - and functional - native plant communities. More juniper reduction is planned over the next few years on Stukel Mountain. Monitoring of juniper treatment areas like this over the next 10-20+ years is necessary to ascertain the extent of change - positive and negative - that is induced by these control activities.

Determination: *This Standard is currently being met.*

As with the determination for the first Standard, Standard 3 must be considered met at this time on the allotment. See Standard 1 for the data, evaluation and determination information that is pertinent to this Standard. The juniper encroachment issue looms as a ever increasing problem, but is being aggressively addressed as a fuel reduction issue. (See "Management Recommendations" section.)

STANDARD 4 - WATER QUALITY (Surface water and groundwater quality, influenced by agency actions, complies with State water quality standards.)

There are no listed quality impaired waters within or closely adjacent to this allotment. All of the allotment drainages, including the intermittent drainage flowing through the aspen grove meadow, are widely disconnected from the nearest water body of concern - the Lost River - by variably developed private lands. The Lost River is a State of Oregon 303(d) listed water for an assortment of recognized problems. Grazing on this allotment is not thought to have any effect on the water quality of the Lost River - good or bad - though conceptually the currently adequate vegetation conditions on BLM administered lands are likely a positive factor in inhibiting excessive run-off and sedimentation. The lands on and around the Lost River to the north and west of the allotment are all private and have an array of other impacting and disturbance factors that variably contribute to water quality problems: dense roads, gravel pits, alfalfa and potato farming, houses, intensive livestock pasturing, etc.. Outside of the cattle grazing and a few primitive roads on the BLM lands, none of these impacting activities are within BLM purview. Since the vegetation communities have been estimated to be functional, the cattle grazing on the BLM portions of the Jeld-Wen allotment is thought to be a non-issue in the overall water quality concerns.

Determination: *This Standard is currently being met (or is not applicable).*

STANDARD 5 - NATIVE, T&E, and LOCALLY IMPORTANT SPECIES (Habitats support healthy, productive and diverse populations and communities of native plants and animals (including special status species and species of local importance) appropriate to soil, climate and land form.)

The primary information, monitoring, and indicators to be used in evaluating this Standard are those listed under Standard 1.

Animals: The previously mentioned “mini core team” process during 1990-91, identified a couple wildlife concerns or items of interest relative to this allotment. The notes from that process stated the following for wildlife:

Wildlife: The aspen enclosure is of concern. There is also bald and golden eagle activity around the reservoir. This area is deer summer range, so it would be beneficial to improve range conditions.

This information indicates the importance of the area for various wildlife species, though except for the noted deer browse problem, the issues are unrelated to livestock grazing. In the Klamath Basin, Stukel Mountain is situated like an “island” of largely undeveloped wildlands within a “sea” of developed private agricultural lands. The BLM lands on the mountain (almost ½ of the area) - though not in pristine condition - could be considered as reservoirs of comparatively stable, good condition lands in an area with the potential for drastic change due to its dominant private status.

As already noted, Stukel Mountain is important year-round deer habitat area. During the previously noted heavy use period, competition for browse species between the deer and cattle was likely high. One Modified Cole Browse utilization transect was established and read for chokecherry (*Prunus virginiana*) within the allotments extreme northern end (BLM land on the SW slope of Olene Hill) in 1991-1992. These were two of the driest back-to-back years in the last half of the 20th century. This study site is in an area adjacent to unfenced private lands which receive consistently high use. Cole Browse readings make two measurements of shrub utilization: one of the post-livestock grazing utilization (fall) with the other reading made the following spring. This latter reading is done to measure the additional winter deer use. In this area, it would be expected that much of the summer/fall use would also be deer use - especially on chokecherry - so it is very hard to differentiate the different grazing animals. The fall utilization (read on 10/22/91) was 89% - severe use - but the followup spring reading (5/4/92) did not record the use for some reason, allowing for no winter deer use differentiation. The fall reading does point out that browse use can be heavy in the area which is a concern for maintaining proper shrub communities. However, since the ecological condition of the vegetation communities are currently acceptable it is thought that this competition is not currently a problem, but bears close monitoring in the future. The juniper encroachment issue, as discussed under Standard 3, is also a wildlife habitat issue but will not be reiterated here.

Plants: This allotment was identified during the “mini-core” team process as having a “... *possibility of Rorippa sites in areas where vernal water occurs.*” No Columbia cress has as yet been recorded on the allotment and no other special status plants are known to exist either.

Portions of this allotment were surveyed for special status vascular plants and noxious weeds in 1979, and 1995. The majority of this allotment was again surveyed in 1997 under a botanical contract survey for special status vascular plants and noxious weeds. As a result of these combined

surveys, one site of the Klamath County noxious weed dalmatian toadflax (*Linaria dalmatica*) was discovered in 1995 in the northern part of the allotment on BLM administered land. This is a small site consisting of approximately 30 plants. This site has been eradicated since its discovery. In 2002, in order to complete the area not surveyed in 1997, the central portion of this allotment is currently being surveyed for special status vascular plants and noxious weeds. As a result of these current surveys, any new sites discovered will be managed as per resource area management guidelines.

Determination: ***This Standard is currently being met.***

As with the determination for the first two Standards, Standard 5 must be considered met at this time on the allotment. See Standards 1 and 2 for the data, evaluation and determination information that is pertinent to this Standard. (See “Management Recommendations” section).

* * *

Management Recommendations:

Although this Assessment has indicated that current conditions and stocking levels on the allotment are appropriate, past monitoring and observational information indicates that the potential for resource problems still exists on the BLM administered lands depending on cattle drift/trespass from adjacent areas, exchange-of-use amounts, drought, and other environmental pressures. A basic disadvantage with the management of this allotment - and most section 15 allotments - is the highly fragmented nature of the public lands which severely limits the opportunity for, and potential effects of, unilateral resource management actions. In other words, we must work cooperatively with our neighbors - primarily Jeld-Wen, Inc. and their designated grazing lessee - in making any substantive changes in the area, grazing or otherwise. Even with up-front cooperation, making and maintaining changes over the long-term is difficult in these fragmented section 15 areas because of frequent lessee turnover, private (and sometimes public) land sales, higher resource priorities on the more contiguous public land areas, poor fencing, and poor access and resulting limited use supervision. The basic nature of these public land parcels is a problem, in that they are the poorest (steepest, rockiest, driest, lowest production, etc.) lands in the area that have remained as public land because they were never desired during past land disposal eras.

Regardless of the above, a few management changes are recommended to minimize future problem potentials and to assist or accelerate condition improvements. After completion of this Assessment, the management recommended below - particularly the first two - will be discussed with the current grazing lessee and land owner and pursued as voluntary actions. If overuse becomes a chronic problem in the future, re-assessment of the allotment would be necessary and further definitive actions may need taken. This could be either by formal agreement (43 CFR 4110.3-3) or the issuance of a grazing decision (43 CFR 4160) - both of which would entail changes to the grazing lease:

1. To help maintain or improve vegetation conditions, a deferred-rotation grazing system should be implemented in combination with the neighboring Stukel-Dehlinger C. (#0815) allotment. There currently is an opportunity for this since the current lessee (base property lessee) also has the lease for #0815. Combining the two allotments into one multi-pasture, deferred-rotation grazing system would have advantages to the resource, while not affecting the total combined stocking levels. This

system could be of particular benefit to the operator by helping preclude the potential for a grazing use reduction on allotment #0815 (see the Stukel-Dehlinger C. (#0815) Assessment). A proposed grazing schedule is as listed below using allotment #0815 as a pasture in conjunction with the three #0822 pastures. The combined use would be for 150 head/pairs from 5/1 through 8/15:

FOUR PASTURE SYSTEM

	<u>#0815 1.</u>	<u>North Past.3.</u>	<u>South Past.3.</u>	<u>Central Past. 3.</u>
Year 1	5/1 - 5/27	5/28 - 6/23	6/23 - 7/19	7/19 - 8/15 2.
Year 2	5/28 - 6/23	5/1 - 6/10	7/19 - 8/15 2.	6/23 - 7/19
Year 3	6/23 - 7/19	7/19 - 8/15 2.	5/1 - 6/10	5/28 - 6/23
Year 4	7/19 - 8/15 2.	6/23 - 7/19	5/28 - 6/23	5/1 - 6/10

1. The Stukel-Dehlinger C. allotment (#0815) could potentially be grazed as a two-pasture system itself, adding another pasture to the overall rotation. It was once divided into a West and East pasture (see #0815 Assessment). This added complexity will not be pursued now, but may be addressed in the future.
2. Use after 8/15 would have to be on discretely fenced private lands (e.g. Jeld-Wen, Inc. leased lands) since the BLM lease flexibility allows for use only through early/mid August.
3. Logistically, it may be necessary to combine the Central pasture with either the North or South pasture to make an effective rotation system.

To make this system work, rehabilitation and yearly maintenance of the internal pasture fences would be required. Since extensive maintenance/reconstruction may be necessary, full implementation of the system could take some years to complete. The rotations assume that cattle enter and leave the area through the South pasture, but could be trailed to/from any of the pastures to begin/end use. Although all of the pastures are intermingled with private, the Central pasture is Jeld-Wen, Inc. dominated, with a minor BLM component. This pasture also includes the private lands along Hidden Valley Road (from Crystal Springs Road to the Jeld-Wen owned reservoir in the SE 1/4 of section 35) that are fenced separately. The integrity of these fences is unknown but suspected to be fair to totally dysfunctional.

If a joint rotation system with the #0815 allotment does not work out, or the allotments have different grazing lessees in the future (likely), then an allotment specific rotation should be used. The most simple rotation would be a two or three-pasture, deferred rotation system. The following would be a tentative rotations for the currently allowed 84 head and season of use of 5/1 to 7/15:

THREE PASTURE SYSTEM a.

	<u>North Pasture</u>	<u>South Pasture</u>	<u>Central Pasture</u>
Year 1	5/1 - 5/25	5/26 - 6/19	6/20 - 7/15
Year 2	6/20 - 7/15	5/1 - 5/25	5/26 - 6/19
Year 3	5/26 - 6/19	6/20 - 7/15	5/1 - 5/25

- a. This system assumes that the pastures are roughly balanced as to forage production. Utilization monitoring over time would have to be performed to ascertain the true pasture balance.

TWO PASTURE SYSTEM b.

	<u>North Pasture</u>	<u>South Pasture</u>
Year 1	5/1 - 6/15	6/16 - 7/15
Year 2	6/1 - 7/15	5/1 - 5/31

- b. This rotation is based on the assumption that the North pasture has a higher forage production capability

and can take extra week grazing use; it combines the Central & North pastures from the other rotation systems.

2. An exchange-of-use credit for the extensive intermingled private lands should either be authorized at a low level or not at all. Exchange-of-use is a discretionary action under grazing regulations (43 CFR 4130.6-1), which state, in part, that this use must “...*be in harmony with the management objectives for the allotment...*”. Analysis of the monitoring information, which implicitly includes the private lands, indicates that the current BLM leased maximum (with no exchange-of-use) is about appropriate for the allotment. Higher grazing levels would be likely to result in more frequent heavy use covering larger areas. If an exchange-of-use is requested, the maximum allowed should be no more than the 43 AUMs that the climate adjusted utilization analysis under Standard 1 determined *might* be available. In any event, if the land owners wish to make more grazing use of their private lands, they may always fence and use them separately from the public land grazing.
3. Reduction in the length of the grazing season was proposed in the KFRA ROD/RMP and could be useful in the future if overuse problems arise. Specifically, that plan proposed a season-of-use of 5/1 to 7/1. With the same amount of cattle now authorized (84 head) this grazing season reduction would effectively reduce the AUMs authorized to 171 AUMs, an 18½% reduction. At the current 210 AUM level, 98 head could be grazed with the 5/1-7/1 season. After a couple years of grazing with the implementation of the first two recommendations above, this recommendation may need implemented if further livestock management action is needed. In below average years, resource conditions may warrant an early removal of the livestock. This would be addressed on a year-to-year basis (see next recommendation).
4. Rangeland monitoring studies will continue to be collected as scheduled in the KFRA Monitoring Plan. This includes the reading of utilization (points and mapping as necessary) every three years, re-reading of the established Cole Browse study (if or as necessary), possible relocating and retaking of some of the utilization photo points, and the possible establishment of a nested frequency trend plot dependent on other priorities and available manpower.
5. As in the past, yearly use supervision will also take place to ensure that the grazing use is within approved parameters, that drift/trespass is not occurring or is stopped quickly if discovered, and to provide early warning of possible excessive use. If overuse looks likely to occur before the licensed grazing use expires, the lessee would be asked to move their cattle early. Lessee cooperation in this regard will be considered in the future implementation of more drastic changes in the grazing lease parameters. Use supervision is critical to ensure that unauthorized use does not occur; a past problem that was noted numerous times in the files.
6. Juniper treatment (density reduction) should be undertaken within vegetation types where young (<100 year old) western juniper is encroaching or increasing beyond the ecological site description defined normal range of variation. Of particular importance would be the removal of most trees from any of the mountain/basin big sagebrush, mountain mahogany, and bitterbrush potential ecological sites, which are common on the allotment. Other vegetation management treatment activities could also be pursued on the allotment though such activities are beyond the scope of this Assessment. These could include: timber management activities to reduce stocking levels with potential increases in forage quantity/quality; aspen management (fire other disturbance) activities at the aspen grove to enhance conditions; and brush field management activities for enhancing shrub community conditions for big game species - particularly deer.

7. The aspen enclosure fence should be considered as a candidate for rehabilitation, as it is in mediocre shape, and even possible expansion to include some of the wetter portions of the adjacent meadow.

8. Klamath Falls Resource Area has a very proactive weed program which includes inventories and site treatments that consist of biological, chemical, and manual treatments. The treatment efforts are to contain weed sites, reduce population size, and eradicate weed sites where possible. This will continue to be pursued on this and all KFRA grazing allotments.

	*	*	*
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Determination

- (X) Existing grazing management practices and/or levels of grazing use (i.e. potential grazing use as per RMP) on the Jeld-Wen (#0822) allotment promotes achievement or significant progress towards the Oregon Standards for Rangeland Health and conform with the Guidelines for Livestock Grazing Management (Appendix 1).
- () Existing grazing management practices and/or levels of grazing use (i.e. potential grazing use as per RMP) on the Jeld-Wen (#0822) allotment will require modification or change prior to the next grazing season to promote achievement of the Oregon Standards for Rangeland Health and conform with the Guidelines for Livestock Grazing Management.

/s/ Teresa A. Raml
Manager, Klamath Falls Resource Area

9/25/02
Date

Guidelines for Livestock Grazing Management

Guidelines for livestock grazing management offer guidance in achieving plan goals, meeting standards for rangeland health and fulfilling the fundamentals of rangeland health. Guidelines are applied in accordance with the capabilities of the resource in consultation, cooperation, and coordination with permittees/lessees and the interested public. Guidelines enable managers to adjust grazing management on public lands to meet current and anticipated climatic and biological conditions.

General Guidelines

- A. Involve diverse interests in rangeland assessment, planning and monitoring.
- B. Assessment and monitoring are essential to the management of rangelands, especially in areas where resource problems exist or issues arise. Monitoring should proceed using a qualitative method of assessment to identify critical, site-specific problems or issues using interdisciplinary teams of specialists, managers, and knowledgeable land users.

Once identified, critical, site-specific problems or issues should be targeted for more intensive, quantitative monitoring or investigation. Priority for monitoring and treatment should be given to those areas that are ecologically at-risk where benefits can be maximized given existing budgets and other resources.

Livestock Grazing Management

- A. The season, timing, frequency, duration and intensity of livestock grazing use should be based on the physical and biological characteristics of the site and the management unit in order to:
 - a. provide adequate cover (live plants, plant litter and residue) to promote infiltration, conserve soil moisture and to maintain soil stability in upland areas;
 - b. provide adequate cover and plant community structure to promote streambank stability, debris and sediment capture, and floodwater energy dissipation in riparian areas.
 - c. promote soil surface conditions that support infiltration;
 - d. avoid sub-surface soil compaction that retards the movement of water in the soil profile;
 - e. help prevent the increase and spread of noxious weeds;
 - f. maintain or restore plant communities to promote photosynthesis throughout the potential growing season;
 - g. maintain or restore plant communities to promote photosynthesis throughout the potential growing season;
 - h. promote soil and site conditions that provide the opportunity for the establishment of desirable plants;
 - i. protect or restore water quality; and
 - j. provide for the life cycle requirements, and maintain or restore the habitat elements of native (including T&E, special status, and locally important species) and desired

plants and animals.

2. Grazing management plans should be tailored to site-specific conditions and plan objectives. Livestock grazing should be coordinated with the timing of precipitation, plant growth and plant form. Soil moisture, plant growth stage and the timing of peak stream flows are key factors in determining when to graze. Response to different grazing strategies varies with differing ecological sites.
3. Grazing management systems should consider nutritional and herd health requirements of the livestock.
4. Integrate grazing management systems into the year-round management strategy and resources of the permittee(s) or lessee(s). Consider the use of collaborative approaches (e.g., Coordinated Resource Management, Working Groups) in this integration.
5. Consider competition for forage and browse among livestock, big game animals, and wild horses in designing and implementing a grazing plan.
6. Provide periodic rest from grazing for rangeland vegetation during critical growth periods to promote plant vigor, reproduction and productivity.
7. Range improvement practices should be prioritized to promote rehabilitation and resolve grazing concerns on transitory grazing land.
8. Consider the potential for conflict between grazing use on public land and adjoining land uses in the design and implementation of a grazing management plan.

Facilitating the Management of Livestock Grazing

1. The use of practices to facilitate the implementation of grazing systems should consider the kind and class of animals managed, indigenous wildlife, wild horses, the terrain and the availability of water. Practices such as fencing, herding, water development, and the placement of salt and supplements (where authorized) are used where appropriate to:
 - a. promote livestock distribution;
 - b. encourage a uniform level of proper grazing use throughout the grazing unit;
 - c. avoid unwanted or damaging concentrations of livestock on streambanks, in riparian areas and other sensitive areas such as highly erodible soils, unique wildlife habitats and plant communities; and
 - d. protect water quality.
2. Roads and trails used to facilitate livestock grazing are constructed and maintained in a manner that minimizes the effects on landscape hydrology; concentration of overland flow, erosion and sediment transport are prevented; and subsurface flows are retained.

Accelerating Rangeland Recovery

1. Upland treatments that alter the vegetative composition of a site, like prescribed burning, juniper management and seedings or plantings must be based on the potential of the site and should:
 - a. retain or promote infiltration, permeability, and soil moisture storage;
 - b. contribute to nutrient cycling and energy flow;
 - c. protect water quality;

- d. help prevent the increase and spread of noxious weeds;
 - e. contribute to the diversity of plant communities, and plant community composition and structure;
 - f. support the conservation of T&E, other special status species and species of local importance; and
 - g. be followed up with grazing management and other treatments that extend the life of the treatment and address the cause of the original treatment need.
2. Seedlings and plantings of non-native vegetation should only be used in those cases where native species are not available in sufficient quantities; where native species are incapable of maintaining or achieving the standards; or where non-native species are essential to the functional integrity of the site.
3. Structural and vegetative treatments and animal introductions in riparian and wetland areas must be compatible with the capability of the site, including the system's hydrologic regime, and contribute to the maintenance or restoration of properly functioning condition.